$$1.65 < |f3/fw| < 2.8$$

$$2.8 < f4/fw < 7.1$$

where f2 is the focal length of said second lens unit, f3 is the focal length of said third lens unit,

f4 is the focal length of said fourth lens unit, and fw is the focal length of said zoom lens in the

wide-angle end.--

REMARKS

Reconsideration and allowance of the subject application are respectfully

solicited.

Claims 1 through 71 are pending, with Claims 1, 18, 29, 35, 45, 61, 62, 63, 64,

65, and 66 being independent. Claims 18 through 60 were withdrawn from consideration, and

Claims 1 through 17 were examined. Claims 1 and 2 have been amended. Claims 61 through 71

have been added. The specification has been amended.

The Official Action reminded Applicant to review the Abstract for compliance

with the rules. Applicant has respectfully revised the Abstract in keeping with this kind

suggestion.

Claims 1, 3 through 6, 8 through 11, 13, 16, and 17 were variously rejected

under 35 U.S.C. § 102 over U.S. Patent Nos. 4,653,873 (Kawamura), 5,748,384 (Sensui), and

6,075,653 (Narimatsu, et al.). Claims 2, 7, 12, 14, and 15 were objected to and indicated as

being allowable if rewritten in independent form. All objections and rejections are respectfully

traversed, and are submitted to have been obviated by the amendment of Claim 1 to include the

features of objected-to Claim 2 and addition of new independent Claims 61 through 64

formulated upon the basis of objected-to Claims 7, 12, 14, and 15, respectively, with each of

Claims 1 and 61 through 64 having been further amended in a manner respectfully submitted by Applicant not to affect the allowability of the claims, namely the recitation that the separation between adjacent lens units varies during zooming has been added, and "< 52" and "< 60" have been changed to "≤ 52" and "≤ 60".

Turning to the remaining newly-presented independent claims, Claim 65 recites, inter alia, that the first lens unit has two negative lenses at the most object side, and moves during variation of magnification.

Claim 66 recites, inter alia, that the first lens unit comprises three lenses including two negative lenses at the most object side.

However, Applicant respectfully submits that none of Kawamura, Sensui, and Narimatsu, et al. discloses or suggests at least the above-discussed claimed features as recited, inter alia, in Claims 65 and 66.

The dependent claims are also submitted to be patentable because they set forth additional aspects of the present invention and are dependent from independent claims discussed above. Therefore, separate and individual consideration of each dependent claim is respectfully requested.

Applicant submits that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

_____
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VERSION SHOWING CHANGES MADE TO THE SPECIFICATION

Please substitute the following paragraph for the paragraph starting at page 3, line 24 and ending at page 4, line 18.

In the view of the above object, in accordance with an aspect of the invention, there is provided a zoom lens comprising, in order from an object side to an image side, a first lens unit of negative refractive power, a second lens unit of positive refractive power, a third lens unit of negative refractive power, and a fourth lens unit of positive refractive power, wherein the first lens unit has a negative lens located on the most object side thereof, and the negative lens located on the most object side of the first lens unit satisfies the following conditions:

(a) $35 < v11n < 65$, and

(b) when $35 < v11n \ [<] \ \leq 52$,

$-0.013 \ v11n + 2.19 < N11n < -0.005 \ v11n + 1.92$,

when $52 < v11n \ [<] \ \leq 60$,

$1.5 < N11n < -0.005 \ v11n + 1.92$,

when $60 < v11n < 65$,

$1.5 < N11n < -0.022 \ v11n + 2.94$,

where $v11n$ is an Abbe number of a material of the negative lens located on the most object side of the first lens unit, and $N11n$ is a refractive index of the material of the negative lens located on the most object side of the first lens unit.

Please substitute the following paragraph for the paragraph starting at page 4, line 19 and ending at page 5, line 5.

In the above zoom lens, the first lens unit has a second negative lens other than the negative lens located on the most object side thereof, and the second negative lens satisfies the following conditions:

(c) $35 < v12n < 65$, and

(d)   when $35 < v12n\ [<] \le 52$,

$-0.013\ v12n + 2.19 < N12n < -0.005\ v12n + 1.92$,

when $52 < v12n\ [<] \le 60$,

$1.5 < N12n < -0.005\ v12n + 1.92$,

when $60 < v12n < 65$,

$1.5 < N12n < -0.022\ v12n + 2.94$,

where $v12n$ is an Abbe number of a material of the second negative lens of the first lens unit, and $N12n$ is a refractive index of the material of the second negative lens of the first lens unit.

Please substitute the following paragraph for the paragraph starting at page 7, line 15 and ending at page 8, line 8.

In accordance with another aspect of the invention, there is provided a zoom lens comprising, in order from an object side to an image side, a first lens unit of negative refractive power, a second lens unit of positive refractive power, and a third lens unit, wherein all said first to third lens units move during variation of magnification, the first lens unit has a negative lens

located on the most object side thereof, and the negative lens located on the most object said of the first lens unit satisfies the following conditions:

(a) $35 < v11n < 65$, and

(b)   when $35 < v11n\ [<]\ \leq 52$,

    $-0.013\ v11n + 2.19 < N11n < -0.005\ v11n + 1.92$,

    when $52 < v11n\ [<]\ \leq 60$,

    $1.5 < N11n < -0.005\ v11n + 1.92$,

    when $60 < v11n < 65$,

    $1.5 < N11n < -0.022\ v11n + 2.94$,

where v11n is an Abbe number of a material of the negative lens located on the most object side of the first lens unit, and N11n is a refractive index of the material of the negative lens located on the most object side of the first lens unit.

    Please substitute the following paragraph for the paragraph starting at page 20, line 5 and ending at page 20, line 24.

    (A)   The zoom lens according to the first embodiment, while having the above-mentioned basic construction, satisfies the following conditions (1), (2a), (2b) and (2c), or satisfies the following conditions (1) to (3):

(a) $37 < v1n < 65$,   ... (1)

(b)   when $35 < v1n\ [<]\ \leq 52$,

    $-0.013\ v1n + 2.19 < N1n < -0.005\ v1n + 1.92$,   ... (2a)

when $52 < \nu 1n \, [<] \leq 60$,

$$1.5 < N1n < -0.005 \, \nu 1n + 1.92, \qquad \ldots (2b)$$

when $60 < \nu 1n < 65$,

$$1.5 < N1n < -0.022 \, \nu 1n + 2.94, \qquad \ldots (2c)$$

(c) $0.9 < |f1/fw| < 1.8$ $\ldots (3)$

where $\nu 1n$ is an Abbe number of a material of a negative lens included in the first lens unit, $N1n$ is a refractive index of the material of the negative lens included in the first lens unit, $f1$ is a focal length of the first lens unit L1, and fw is a focal length of the entire zoom lens in the wide-angle end.

Please substitute the following paragraph for the paragraph starting at page 23, line 2 and ending at page 23, line 15.

In the first embodiment, desirably, it is preferred that the conditions (1) to (3) are limited to the following ranges:

(a)′ $37 < \nu 1n < 65$, $\ldots (1)'$

(b)′   when $35 < \nu 1n \, [<] \leq 52$,

$$-0.008 \, \nu 1n + 2.02 < N1n < -0.005 \, \nu 1n + 1.90, \qquad \ldots (2a)'$$

when $52 < \nu 1n \, [<] \leq 60$,

$$-0.008 \, \nu 1n + 2.02 < N1n < -0.005 \, \nu 1n + 1.92,$$

$$\ldots (2b)'$$

when $60 < \nu 1n < 65$,

$$[0.008] \underline{-0.008}\ \nu 1n + 2.02 < N1n < -0.022\ \nu 1n + 2.94, \qquad \ldots (2c)'$$

(c)' $1.15 < |f1/fw| < 1.45$ ... (3)'

VERSION SHOWING CHANGES MADE TO THE ABSTRACT

--A zoom lens [includes,] including, in order from an object side to an image side, a first lens unit L1 of negative refractive power, a second lens unit L2 of positive refractive power, a third lens unit L3 of negative refractive power, and a fourth lens unit L4 of positive refractive power, wherein, during variation of magnification from a wide-angle end to a telephoto end, [the first lens unit] L1 moves with a locus convex toward the image side, [the second lens unit] L2 moves toward the object side in such a way as to decrease a separation between [the first lens unit] L1 and [the second lens unit] L2, [the third lens unit] L3 moves toward the object side in such a way as to increase a separation between [the second lens unit] L2 and [the third lens unit] L3, and [the fourth lens unit] L4 moves toward the object side in such a way as to decrease a separation between [the third lens unit] L3 and [the fourth lens unit] L4, and wherein the Abbe number and refractive index of a negative lens included in [the first lens unit] L1 are appropriately set.--

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VERSION SHOWING CHANGES MADE TO THE CLAIMS

1. (Amended) A zoom lens comprising, in order from an object side to an image side, a first lens unit of negative refractive power, a second lens unit of positive refractive power, a third lens unit of negative refractive power, and a fourth lens unit of positive refractive power, wherein said first lens unit has a negative lens located on the most object side thereof, and said negative lens located on the most object side of said first lens unit satisfies the following conditions:

(a) $35 < v11n < 65$, and

(b)   when $35 < v11n [<] \leq 52$,

$-0.013 \, v11n + 2.19 < N11n < -0.005 \, v11n + 1.92$,

when $52 < v11n [<] \leq 60$,

$1.5 < N11n < -0.005 \, v11n + 1.92$,

when $60 < v11n < 65$,

$1.5 < N11n < -0.022 \, v11n + 2.94$,

where $v11n$ is an Abbe number of a material of said negative lens located on the most object side of said first lens unit, and $N11n$ is a refractive index of the material of said negative lens located on the most object side of said first lens unit,

wherein said first lens unit has a second negative lens other than said negative lens located on the most object side thereof, and said second negative lens satisfies the following conditions:

(c) $35 < v12n < 65$, and

(d)   when $35 < v12n \leq 52$,

-0.013 v12n + 2.19 < N12n < -0.005 v12n + 1.92,

when $52 < v12n \leq 60$,

$1.5 < N12n < -0.005$ v12n + 1.92,

when $60 < v12n < 65$,

$1.5 < N12n < -0.022$ v12n + 2.94,

where v12n is an Abbe number of a material of said second negative lens of said first lens unit,

and N12n is a refractive index of the material of said second negative lens of said first lens unit,

and

wherein the separation between adjacent lens units varies during zooming.

2.   (Amended) A zoom lens according to claim [1] 63, wherein said first lens

unit has a second negative lens other than said negative lens located on the most object side

thereof, and said second negative lens satisfies the following conditions:

(c) $35 < v12n < 65$, and

(d)   when $35 < v12n$ [<] ≤ 52,

-0.013 v12n + 2.19 < N12n < -0.005 v12n + 1.92,

when $52 < v12n$ [<] ≤ 60,

$1.5 < N12n < -0.005$ v12n + 1.92,

when $60 < v12n < 65$,

$$1.5 < N12n < -0.022 \, v12n + 2.94,$$

where $v12n$ is an Abbe number of a material of said second negative lens of said first lens unit,

and $N12n$ is a refractive index of the material of said second negative lens of said first lens unit.

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